

wherein Z is a carbon atom or R¹ - B fragment

p is 1, 2 or 3

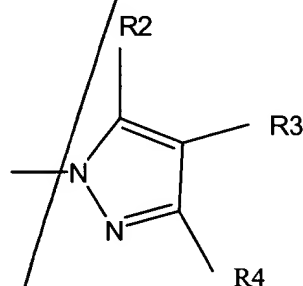
q is 3-p and

A is a counterion

R¹ is: (i) hydrogen, aryl or aralkyl each optionally substituted

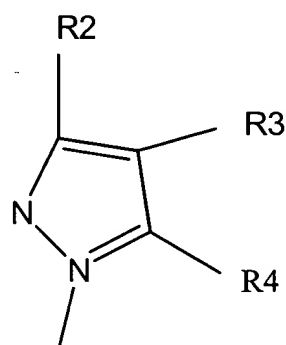
with from one to five halogen or C₁ to C₆ alkyl groups; or (ii) C₁ to C₆ alkyl, C₁ to C₆ alkenyl or C₁ to C₆ alkynyl each optionally substituted with one or more halogen atoms

each L is covalently bound to Z and is independently selected from a group of the formula (II) or (III)



(II)

or



(III)

in which R², R³ and R⁴ are independently selected from:

- (i) halogen, cyano, nitro, sulphonyl, amino, C₁ to C₆ alkylamino, C₁ to C₆ alkylamido, carboxyl, C₁ to C₆ alkyloxycarbonyl, hydroxy, C₁ to C₆

alkoxy, C_1 to C_6 alkylcarbonyloxy, C_1 to C_6 alkylcarbonyl C_1 to C_6 haloalkoxy and hydrogen;

- (ii) aryl or aralkyl each optionally substituted on the aryl ring or, for aralkyl, on the alkylene chain with from one or more of the groups mentioned under (i) above; and
- (iii) C_1 to C_6 alkyl, C_1 to C_6 alkenyl or C_1 to C_6 alkenyl or C_1 to C_6 alkynyl each optionally substituted with one or more of the groups mentioned under (i) and (ii) above;

or either R^2 and R^3 or R^3 and R^4 are linked so as to form a fused aromatic or non-aromatic, ring system with the pyrazolyl ring of L;

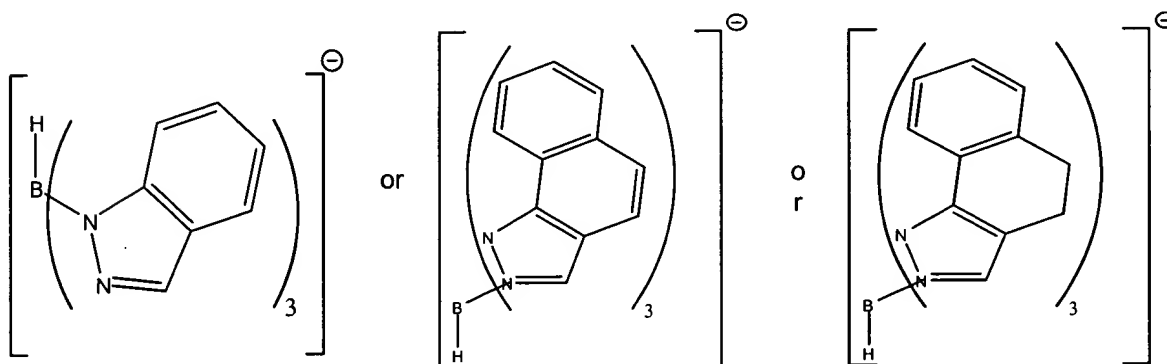
and M is a trivalent lanthanide metal ion.

25. A complex according to claim 24, wherein M is Tb, Ce, Eu, Er, Gd, Tm, Sm or Nd.
26. A complex according to claim 24, wherein Z is H-B.
27. A complex according to claim 24, wherein in formula II or formula III R^4 and/or R^2 is the group $-(CX_2)_nX$, where n is 0 or a positive integer of from 1 to 6 and X is halogen.
28. A complex according to claim 27, wherein X is F.
29. A complex according to claim 28, wherein R^4 is trifluoromethyl.
30. A complex according to claim 29, wherein R^2 is trifluoromethyl and R^3 is H.

31. A complex according to claim 24, wherein in formula II or formula III R^4 and/or R^2 is orthodihalogenated or orthodiperhalomethylated aryl, optionally further substituted on the aryl ring.

32. A complex according to claim 24, wherein in formula II or formula III R^2 and R^3 or R^3 and R^4 are linked so as to form a fused, aromatic or non-aromatic, ring system.

33. A complex according to claim 32, wherein ZL_3 is



34. A complex according to claim 24, wherein A is an anion selected from $CF_3 SO_3^-$, halide, nitrate and perchlorate.

35. A complex according to claim 24, wherein ligands ZL_3 are optionally fluorinated and are arranged about the trivalent lanthanide metal ion M such that there are no carbon-hydrogen bonds within 5\AA of the metal centre.

36. A method of preparing the organometallic complex of claim 24 comprising the steps of reacting M^{3+} ions with ZL_3^- ions in solution and separating the complex from the reaction mixture.

37. A method according to claim 36, wherein the complex is separated from the reaction mixture by solvent extraction.

38. A method according to claim 36, which is carried out under substantially anhydrous conditions.

39. A light emitting device comprising a complex as claimed in claim 24.

40. A device according to claim 39 which is a flat panel display.

41. A light emitting material comprising a film of a complex as claimed in claim 35.

42. A light emitting material comprising the complex of claim 35 dispersed within a matrix.
43. A material according to claim 42, wherein the complex comprises two ligands ZL_3 per metal ion, the said ligands being tridentate.
44. A material according to claim 42, wherein the complex comprises an ion of a trivalent lanthanide metal selected from Tb, Ce, Eu, Er, Gd, Tm, Sm and Nd.
45. A light emitting device comprising a complex containing a lanthanide metal cation complexed with from one to three polydentate ligands, wherein each ligand comprises one or more pyrazolyl groups, optionally substituted and optionally fused with a substituted or unsubstituted, heterocyclic or carbocyclic, aromatic or non-aromatic, ring system, one of the nitrogen atoms of the pyrazolyl groups forming a coordinate bond to the metal.
46. A device according to claim 45 wherein the ligands are trispyrazolylborate anions, the pyrazolyl groups being optionally substituted and optionally fused with a substituted